



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,803	12/29/2003	Ajay G. Gupta	884.A47US1	5339
21186 7590 02/04/2008 SCHWEGMAN, LUNDBERG & WOESSNER, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			EXAMINER THIER, MICHAEL	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 02/04/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/749,803

Applicant(s)

GUPTA ET AL.

Examiner

Michael T. Thier

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-12 and 14-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-12 and 14-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 12/21/2007 have been fully considered but they are not persuasive.

Applicant argues that Itoh teaches that all but one of the communication adapters are wired, and therefore does not teach a plurality of wireless network adapters.

In response to the applicant's argument, the examiner respectfully disagrees. Itoh clearly shows a plurality of network adapters in figure 1 as item 20-1 through 20-4. It is explained in par. 43 that this figure is *merely an example*. In this example the system has 1 wireless card and 3 wired cards, however, one of ordinary skill in the art would understand that this figure is merely one way the invention can be understood, and in no way is the "be all, end all" way for the system. The mere fact that Itoh shows in this example 1 wireless and 2 wired cards, does not teach away from the idea of a plurality of wireless cards, it simply shows one way the invention can be utilized. It would have been obvious to one of ordinary skill in the art at the time of invention that this system could have 2 wireless and 2 wired, or even 3 wireless and 1 wired. Further see par. 17 where it is explained that the portable information device has at least one wireless LAN adapter, therefore implying it could have more than 1. In any event, the rejection is clearly shown to be a 103(a) obvious type rejection that includes other references. The examiner would like to note that the references must be considered as a whole and that the Krantz reference clearly shows a plurality of wireless cards in figure 8, as items 201

and 816, which represent the 802.11 Network module and the GPRS Network module.

Applicant further argues that the examiner took Official Notice of the driver continuously sensing the operational state of the wireless network adapters.

In response to applicant's argument, the examiner respectfully disagrees. The examiner never took Official Notice on the limitation argued by the applicant. It was simply explained that the idea of "the driver "continuously" senses the operational state of the wireless network adaptors" was very well known in the art. The examiner stated that "...the idea of continuously monitoring the operational state of the network adaptors is a very well known and widely used technique in the wireless communications art (commonly known as "Wake on LAN" in the network adaptor area), and is especially used for power conservation. However, for further clarification the examiner provides the following reference to Gavlik." Therefore, the examiner was merely letting the applicant know that this limitation is obvious in the art, and then proceeded to include the Gavlik reference to show the argued limitation. Gavlik teaches the idea of "Wake on LAN" schemes is wide known technique, in column 1 lines 63-67. He explains that this type of scheme detects data traffic on the NIC, and powers down the chip if nothing is detected. This idea clearly reads on continuously sensing an operational state, since it will be continuously checking the data traffic in order to know when to power down the chip. Therefore, the examiner has already provided a reference for the argued limitation and did not take official notice.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-32 rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (US 2002/0072391) in view of Chlytchkov (US 7065638), in further view of Krantz et al. (US 2004/0153676) in view of Gavlik (US 7073077).

Regarding claims 1, 9, 15 and 23. Itoh teaches a system (figure 1) comprising a wireless base-station (figure 1 item 9-1) and a user device (figure 1 item 10). The user device connected to the wireless base station (see figure 1, the dotted line between 20-1 and 9-1), and the device comprising:

a plurality of wireless network adapters in a user device to connect to a system (see figure 1 items 20-1, 20-2, 20-3, and 20-4, i.e. see arguments above which explains the "plurality of wireless", further see Krantz explained below.);

wherein at least one of the plurality of wireless network adapters includes a powered state to continuously scan for a wireless connection or maintain a wireless connection, wherein at least one of the plurality of wireless network adapters includes a reduced power state to conserve power by not continuously scanning for a wireless connection or maintaining a wireless connection; (see par. 15 and 21 where it is explained that a given communication adapter is enabled (powered state), and all other

communication adapters are disabled (reduced power state to conserve power), further see Gavlik for "continuously scanning")

a plurality of network device drivers to control function of the network adaptors (see figure 1 items 20-1, 20-2, 20-3, and 20-4, further see par. 41 i.e. driver software 6 for using the communication adapter 20)

a sensing driver adapted to sense an operational state of at least two of the plurality of network adapters (see par. 13, i.e. "...determining whether all the communication adapters configured in the system are available or not...");

a policy manager adapted to receive state information from the sensing driver and to selectively activate at least one of the plurality of network adapters, through communication with the plurality of network device drivers, based on the state information and a hierarchy of preferred network adapters (see par. 13, i.e. "...enabling the communication adapter specified by the user if it is determined that the communication adapter specified by the user is available", also see par. 15 for the hierarchy, or "priorities", for setting the adapters to be enabled/disabled), the policy manager being adapted to selectively hold others of the plurality of network adapters, through communication with the plurality of network device drivers, based on the state information and a hierarchy of preferred network adapters in a reduced power state (par. 13, i.e. "...disabling, among communication adapters determined to be available, communication adapters other than the enabled communication adapter...", also see par. 15 for the hierarchy, or "priorities", for setting the adapters to be enabled/disabled).

Itoh further teaches of a power saving in a notebook PC (par. 8) and the idea that the software contains multiple layers (figure 1 items 7 and 8);

wherein the policy manager is adapted to selectively hold at least one of a non-selected group of the plurality of wireless network adapters in a reduced power state, and wherein the non selected group does not include activated one of plurality of wireless network adapters. (see par. 15 and 21 where it is explained that a given communication adapter is enabled (powered state), and all other communication adapters are disabled (reduced power state to conserve power), which reads on selectively holding at least one of the non selected group, And this group does not include the activated adapter. He clearly states that the disabled state stops power supply to the adapters, thus being a reduced power state. Further see Gavlik and Krantz below, which also teach the idea of putting network cards into a low power state for power saving.)

However, Itoh does not distinctly disclose that the sense driver and policy manger are at different levels and that the sense driver is at the kernel level.

Chlytchkov teaches a computer system and method in which the software may contain several layers in column 1 lines 31-46. He teaches the idea that device drivers reside in the kernel layer in column 4 lines 27-45 (i.e. the claimed sense driver is located in the kernel layer). He further teaches in column 4 lines 27-45 that the software may contain an application layer, which communicates with the device driver (in the kernel layer) to communicate with the corresponding device. (i.e. the application layer may contain the policy manger to control the wireless network adaptor since it

communicates with the driver in the kernel layer, to effectively then communicate with the actual device (i.e. wherein the actual device may be the wireless network adapter.) Chlytchkov further explains that the different levels of software can be firmware, device drivers, and applications (column 1 lines 30-45). The network device drivers are located in the device driver layer (since they are device drivers), while the sensing driver could be located in the application layer (see figure 1, since it is an application to sense the state of the network adapters), which is a lower level than the device drivers.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Chlytchkov into the teachings of Itoh. The motivation for doing so would have been to make it easier to allow for adding new features and new software (Chlytchkov column lines 26-30, and 46-53).

However, they do not distinctly disclose that the device comprises a battery. The examiner would like to note that a battery in the device of Itoh (which is explained in par. 4 to be a notebook PC, and explained in par. 25 to be portable) is inherent, however for further clarification Krantz is provided to show the obviousness of the battery limitation.

Krantz discloses a method and apparatus for managing power in a network interface modules (title and abstract). He teaches the idea of the portable computing device, i.e. laptop computer from par. 2, or as explained above a notebook PC, comprises a battery (see par. 2 and 4, where he explains the need to minimizing power consumption to extend battery life.) Krantz further shows a plurality of wireless cards in figure 8, as items 201 and 816, which represent the 802.11 Network module and the GPRS Network module.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Krantz into the teachings of Itoh and Chlytchkov. The motivation for doing so would have been to allow for greater mobility, and minimizing power consumption of the battery. (Krantz par. 2 and 4)

However, they do not specifically disclose that the driver “continuously” senses the operational state of the wireless network adaptors, and that wherein the operational state includes connectivity information. Although this is not stated in any of the previously applied references, the examiner would like to note that the idea of continuously monitoring the operational state of the network adaptors is a very well known and widely used technique in the wireless communications art (commonly known as “Wake on LAN” in the network adaptor area), and is especially used for power conservation. However, for further clarification the examiner provides the following reference to Gavlik.

Gavlik teaches an apparatus and method for cutting power to specific circuitry in a network interface device (abstract and title). Gavlik teaches the idea of “Wake on LAN” schemes is wide known technique, in column 1 lines 63-67. He explains that this type of scheme detects data traffic on the NIC, and powers down the chip if nothing is detected. This idea clearly reads on continuously sensing an operational state, since it will be continuously checking the data traffic in order to know when to power down the chip. In column 2 lines 2-5 explain that the idea that operational state includes connectivity information, since the system is continuously checking for the network to

become active in order to allow the network adapter to come out of the sleep state and connect to the network.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Gavlik into the teachings of Itoh, Chlytchkov, and Krantz. The motivation for doing so would have been to allow for power conservation of the device

Regarding claim 3. Itoh further teaches, wherein the policy manager is adapted to store a hierarchy of preferred wireless network adapters. (see par. 15)

Regarding claim 4. Itoh further teaches, wherein the policy manager is further adapted to selectively activate at least one of the plurality of wireless network adapters based on the hierarchy of preferred wireless network adapters. (see par. 15)

Regarding claim 5. Itoh further teaches, wherein the policy manager is adapted to be programmed by a user to establish the hierarchy of preferred wireless network adapters. (see par. 13, i.e. "...specified by a user..." and par. 15)

Regarding claim 6. Krantz further teaches wherein the plurality of wireless network adapters include at least one wireless network interface card adapted to operate according to an IEEE 802.11x standard in par. 3.

Regarding claim 7. Krantz further teaches wherein the plurality of wireless network adapters include at least one wireless network interface card adapted to operate according to general packet radio service standard (GPRS) in par. 51.

Regarding claim 8. Itoh further teaches, wherein the sense driver is adapted to continuously sense the operational state of each of the plurality of wireless network adapters. (see par. 13)

Regarding claim 10. Itoh further teaches, wherein the policy manager is adapted to conserve power in the battery by deactivation of the non-selected ones of the plurality of network adapters. (see par. 11, and 21)

Regarding claim 11. Itoh further teaches the idea of the system comprising a host (figure 1 item 5) and a user input/output interface (see par. 42, i.e. "...expansion slot..."). It would have been obvious to one of ordinary skill in the art to power these components using the battery of the notebook PC.

Regarding claim 12. Itoh further teaches wherein the power source provides power to run the sensing driver and the policy manager where he explains that the system can be a notebook PC (par. 10). Krantz teaches the power source being a battery to allow for portability.

Regarding claim 14. Itoh further teaches, wherein the selected one of the plurality of network adapters is continuously powered by the battery to maintain a connection with a base-station. (par. 13, and 21, the power supply is stopped for disabled adapters, and left to supply enabled adapters to allow communication, par. 72 explains the adapter communicates with an external entity (i.e. a base station))

Regarding claims 16 and 26. Itoh further teaches, wherein storing the hierarchy includes programming a network connection priority and a number of preferred available network adapters. (see par. 15)

Regarding claims 17 and 27. Itoh further teaches, wherein storing a hierarchy of network adapters includes storing at least one wireless network adapter in the hierarchy (see par. 15), wherein activating the preferred network adapter includes attempting to connect the wireless network adapter to a wireless base-station of a wired network (see par. 15, i.e. "...a given communication adapter among said stored number of communication adapters is enabled...", enabling the adapter reads on attempting to connect to a wireless base station, since the adapter can be wireless. Par. 72 explains the adapter communicates with an external entity (i.e. a base station))

Regarding claims 18 and 28. Itoh further teaches, wherein sensing available wireless network adapters includes continuously sensing for newly available wireless network adapters. (see par. 16, i.e. "...attachment/detachment of a LAN card...")

Regarding claims 19 and 29. Itoh further teaches, wherein activating a preferred available, network adapter includes deactivating a less preferred network adapter if a more preferred network adapter is sensed to be available. (see par. 13 and 15)

Regarding claims 20 and 30. Krantz further teaches wherein sensing available network adapters includes continuously sensing whether the connection between the network adapter and the base-station is dropped in par. 8 where he explains the step of determining whether the network interface module can go into a doze state by detecting if there are packets queued for the device to receive (i.e. if the device is connected to the access point to receive packets).

Regarding claims 21-22 and 31. Itoh further teaches the idea wherein the activating of a preferred available network adapter includes deactivating the preferred network adapter if the preferred network adapter is sensed to be unavailable and activating a next, less preferred network adapter. See par. 27-28 where it is explained that the system enables an adapter only if the adapter is available, and that the user can select another adapter to be enabled, and the previously enabled adapter will be disabled in order to enable the new adapter. The user clearly has the ability to activate a next adapter with a lower priority if the adapter enabled loses connection or is unavailable.

Regarding claim 24. Krantz further teaches wherein the plurality of wireless network adapters include at least one wireless network interface card adapted to operate according to an IEEE 802.11x standard, the GPRS standard, IEEE802.2, or IEEE802.3 standards in par. 3.

Regarding claim 25. Krantz further teaches wherein the plurality of wireless network adapters include a first network adapter to communicate by GPRS and a second to operate by an IEEE 802.11x standard in par. 51.

Regarding claim 32. Itoh further teaches wherein the kernel level sense driver is in the user device to connect to an electronic system in par. 13, where he explains the method of a communication adaptor selection, within a laptop computer, which allows for connecting to a LAN.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

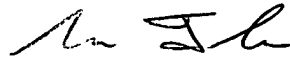
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael T. Thier whose telephone number is (571) 272-2832. The examiner can normally be reached on Monday thru Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael T Thier
Examiner
Art Unit 2617
1/30/2008



DUC M. NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600